

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A method for producing a full-length antibody in a host plant using a virus, ~~the method~~ comprising:

(a) ~~constructing~~ providing a first recombinant viral vector ~~for infection which comprises~~ comprising (1) a recombinant genomic component of the virus, said component having a nucleic acid sequence encoding a movement protein encoding and a nucleic acid sequence and encoding a coat protein ~~nucleic acid sequence~~, and (2) a nucleic acid sequence ~~for the~~ encoding a heavy chain of the antibody, such that the expression of the recombinant genomic component also results in the expression of the heavy chain of the antibody;

(b) ~~constructing~~ providing a second recombinant viral vector ~~for infection which comprises the same recombinant genomic component as the first recombinant viral vector in step (a) except that said component has and~~ and a nucleic acid sequence for the encoding a light chain of the antibody, instead of the heavy chain such that the expression of the recombinant genomic component also results in the expression of the light chain of the antibody; and

(c) infecting the host plant at one or more locations with the first and second recombinant viral vectors and the second recombinant viral vector such that the infection of said plant with the first and second recombinant viral vectors results in systemic infection in the host plant, resulting in a systemic infection of the host plant with the first and second recombinant viral vectors;

(d) ~~expressing the first and second recombinant genomic components, wherein the heavy and light chains resulting from the expression are expressed and assembled into the full-length antibody in the host plant.~~

2. (Originally Presented) The method of claim 1, wherein the full-length antibody is a monoclonal antibody.

3. (Currently Amended) The method of claim 1, wherein the full-length antibody is directed to an antigen selected from the group consisting of hepatitis B surface antigen,

enterotoxin, rabies virus glycoprotein, rabies virus nucleoprotein, Norwalk virus capsid protein, gastrointestinal cancer antigen, G protein of Respiratory Syncytial Virus, ~~Sandostatin~~ octreotide, anthrax antigen and colorectal cancer antigen.

4. (Originally Presented) The method of claim 1, wherein said host plant is a dicotyledon or a monocotyledon.

5-16 (Canceled)

17. (New) A method for producing a full-length antibody in a host plant using a virus, comprising:

(a) providing at least a first recombinant viral vector comprising a nucleic acid sequence encoding a viral movement protein, but which lacks a functional nucleic acid sequence for encoding a viral capsid protein, and (2) a heterologous nucleic acid sequence encoding a foreign polypeptide, such that the expression of the viral movement protein also results in the expression of the foreign polypeptide;

(b) providing at least a second recombinant viral vector comprising a nucleic acid sequence encoding a viral capsid protein, but which lacks a functional nucleic acid sequence for encoding a viral movement protein, and (2) a heterologous nucleic acid sequence encoding a foreign polypeptide, such that the expression of the viral capsid protein also results in the expression of the foreign polypeptide;

(c) infecting the host plant at one or more locations with at least the first and second recombinant viral vectors, resulting in a systemic infection of the host plant with the first and second recombinant viral vectors; and

(d) expressing the foreign polypeptides from the first and second viral vectors, wherein the foreign polypeptides expressed by the first and second recombinant viral vectors are either an antibody light chain or an antibody heavy chain, provided that the first and second recombinant viral vectors do not express the same foreign polypeptide,

wherein the expressed antibody heavy and light chains are assembled into the full-length antibody in the host plant.

18. (New) The method of claim 17, wherein the full-length antibody is a monoclonal antibody.

19. (New) The method of claim 17, wherein the full-length antibody is directed to an antigen selected from the group consisting of hepatitis B surface antigen, enterotoxin, rabies virus glycoprotein, rabies virus nucleoprotein, Norwalk virus capsid protein, gastrointestinal cancer antigen, G protein of Respiratory Syncytial Virus, octreotide, anthrax antigen and colorectal cancer antigen.

20. (New) The method of claim 17, wherein the host plant is a dicotyledon or a monocotyledon.

21. (New) The method of claim 17, wherein the viral movement protein expressed by the first recombinant viral vector and the viral capsid protein expressed by the second recombinant viral vector are from different viruses.

22. (New) The method of claim 17, wherein the nucleic acid sequences encoding the viral capsid protein in the first recombinant viral vector are replaced by the nucleic acid sequences encoding the foreign polypeptide.

23. The method of claim 17, wherein the nucleic acid sequences encoding the viral movement protein in the second recombinant viral vector are replaced by the nucleic acid sequences encoding the foreign polypeptide.

24. (New) A method for producing a full-length antibody in a host plant using a virus, comprising:

(a) providing a recombinant viral vector comprising (1) a nucleic acid encoding a viral movement protein and a nucleic acid encoding a viral capsid protein, wherein the viral movement protein and viral capsid protein are from different viruses, and (2) a heterologous nucleic acid

sequence encoding at least two foreign polypeptides, such that the expression of the viral movement and viral capsid proteins also results in the expression of the at least two foreign polypeptides;

(b) infecting the host plant at one or more locations with the recombinant viral vector, resulting in a systemic infection of the host plant; and

(d) expressing the at least two foreign polypeptides from the recombinant viral vector, wherein the at least two foreign polypeptides are an antibody light chain and an antibody heavy chain, and wherein the expressed antibody heavy and light chains are assembled into the full-length antibody in the host plant.

25. (New) The method of claim 24, wherein the full-length antibody is a monoclonal antibody.

26. (New) The method of claim 24, wherein the full-length antibody is directed to an antigen selected from the group consisting of hepatitis B surface antigen, enterotoxin, rabies virus glycoprotein, rabies virus nucleoprotein, Norwalk virus capsid protein, gastrointestinal cancer antigen, G protein of Respiratory Syncytial Virus, octreotide, anthrax antigen and colorectal cancer antigen.

27. (New) The method of claim 24, wherein the host plant is a dicotyledon or a monocotyledon.

28. (New) A method for producing a full-length antibody in a host plant using a virus, comprising:

(a) providing a first recombinant viral vector comprising a nucleic acid sequence encoding a viral movement protein from a first viral type and a nucleic acid sequence encoding a viral capsid protein from a second viral type;

(b) providing a second recombinant viral vector comprising (1) a nucleic acid sequence encoding the same viral movement protein as encoded by the first recombinant viral vector, but which lacks a functional nucleic acid sequence for encoding a viral capsid protein, and (2) a

nucleic acid sequence encoding an antibody heavy chain, such that the expression of the viral movement protein also results in the expression of the antibody heavy chain;

(c) providing a third recombinant viral vector comprising (1) a nucleic acid sequence encoding the same viral movement protein as encoded by the first recombinant viral vector, but which lacks a functional nucleic acid sequence for encoding a viral capsid protein, and (2) a nucleic acid sequence encoding an antibody light chain, such that the expression of the viral movement protein also results in the expression of the antibody light chain;

(c) infecting the host plant at one or more locations with first, second and third recombinant viral vectors, resulting in a systemic infection of the host plant with the first, second and third recombinant viral vectors; and

(d) expressing the antibody heavy and light chains from the second and third viral vectors, wherein the expressed antibody heavy and light chains are assembled into the full-length antibody in the host plant.